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DIGITAL SIGNAL RECORDING METHOD, DIGITAL SIGNAL
REPRODUCING METHOD, DIGITAL SIGNAL
RECORDING AND REPRODUCING METHOD, AND
DIGITAL SIGNAL RECORDING AND REPRODUCING APPARATUS

BACKGROUND OF THE INVENTION

The invention relates to input/output method
and apparatus for inputting and outputting a digital
signal from a digital interface and, more particularly,
5 to input/output method and apparatus for inputting and
outputting a digital video signal or an audio signal.

According to a conventional digital signal
recording and reproducing apparatus for recording a
digital broadcast signal inputted from a digital
10 interface, reproducing the recorded digital broadcast
signal, and outputting it from the digital interface,
upon recording, copy control information added to the
digital broadcast signal is detected and a copy control
regarding the recording of the digital broadcast signal
15 is performed. Upon reproduction, the copy control
information added to the digital broadcast signal
reproduced from a recording medium is detected, and,
for example, an encrypting process is executed in order
to protect the signal which is outputted to the digital
20 interface.

However, if the copy control information
added to the digital broadcast signal indicates that

the copy is possible (copy freely), upon recording, the signal is recorded onto the recording medium as a signal indicative of "copy freely" without being protected, and upon reproduction, the signal is
5 outputted to the digital interface as a signal indicative of "copy freely" without being protected (encrypted). Therefore, even in case of the digital broadcast signal indicative of "copy freely", if the user wants to inhibit the illegal use of the signal
10 which is recorded onto the recording medium or the signal which is outputted to the digital interface, the illegal use of such a digital broadcast signal indicative of "copy freely" cannot be prevented. The "illegal use" used here denotes that the signal
15 recorded on the recording medium or the digital broadcast signal outputted to the digital interface is tapped and distributed in a lump to many and unspecified persons without permission by using the Internet or the like.

20 SUMMARY OF THE INVENTION

It is an object of the invention to provide a digital signal recording and reproducing method whereby even in case of a digital broadcast signal indicative of "copy freely", illegal use of a signal which is
25 recorded onto a recording medium or a signal which is outputted to a digital interface can be inhibited.

To accomplish the above object, according to

the invention, there is provided a digital signal recording and reproducing method of recording a digital signal inputted from a digital interface onto a recording medium and outputting the digital signal reproduced from the recording medium from the digital interface, comprising the steps of:

with respect to first, second, third, and fourth information as information to protect a copyright, adding the first and second information to the digital signal; inputting and outputting the third information to/from the digital interface together with the digital signal; and when the fourth information is stored onto the recording medium, in case of recording the digital signal, deciding a value of the fourth information from a combination of the first, second, and third information, and recording the fourth information onto the recording medium; and

in case of reproducing the digital signal, deciding a value of the third information from a combination of the first, second, and fourth information and outputting the third information from the digital interface.

The first information is information to control a copy restriction of the digital signal. The second information is information to perform a control about whether the digital signal is protected against the illegal use or not. The third information is information to indicate whether the digital signal has